

Advancement Handbook for Aviation Electronics Technician (Organizational Maintenance)

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PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Aviation Electronics Technician (AT[O]) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 3 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the “*Exam Expectations*” section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

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CONTENTS

PART	PAGE
1 Advancement Handbook for AT3(O)	1-1
2 Advancement Handbook for AT2(O)	2-1
3 Advancement Handbook for AT1(O)	3-1
Appendix A References Used in This Advancement Handbook	A-1

Part 1

Advancement Handbook for AT3(O)

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain automatic carrier landing systems (ACLS)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of ACLS • Operating parameters of ACLS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of ACLS. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters on ACLS to include mode 1, mode II, and mode III.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain attitude heading reference systems (AHRS)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of AHRS • Operating parameters of AHRS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electrician's Mate 3 & 2, Chapter 7 (NAVEDTRA 10348-G) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of AHRS. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of AHRS.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain control indicator systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of control indicator systems • Operating parameters of control indicator systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Navy Electricity and Electronics Training Series, Module 15, Chapters 1, 2, and 4 (NAVEDTRA 172-15-00-98) • Aviation Electronics Technician 3, Chapter 3 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of control indicator systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the basic theory of operation and operating parameters of synchros and servomechanisms.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain cryptologic systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of cryptologic systems • Operating parameters of cryptologic systems • Location of modules of cryptologic systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Navy Electricity and Electronics Training Series, Module 17, Chapter 3 (NAVEDTRA 172-17-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of cryptologic systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of cryptologic systems, operating parameters of cryptologic systems, and the location of modules on cryptologic systems.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain data bus lines
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of data bus lines • Operating parameters of data bus lines • Methods of transmitting digital data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data bus lines. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of data bus lines, operating parameters of data bus lines, and the methods of transmitting digital data on data bus lines.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain data display systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of data display systems • Operating parameters of data display systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 6, Chapters 1 through 3 (NAVEDTRA 172-06-00-98) • Navy Electricity and Electronics Training Series, Module 7, Chapters 1 through 4 (NAVEDTRA 172-07-00-98) • Navy Electricity and Electronics Training Series, Module 8, Chapters 1 through 3 (NAVEDTRA 172-08-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data display systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of data display systems to include cathode-ray tubes (CRTs), amplifiers, power supplies, and other solid-state devices.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain data link systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of data link systems • The interface structure between participating units of a data link system • The operating features of participating units of a data link system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 17, Chapter 5 (NAVEDTRA 172-17-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data link systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of data link systems, recognizing the interface structure between participating units of a data link system, and the operating features of participating units of a data link system.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain anti-submarine warfare (ASW) systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of ASW systems • Operating parameters of ASW systems • Factors that affect the behavior of a sound beam in water
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 22, Chapter 2 (NAVEDTRA 172-22-00-98) • Navy Electricity and Electronics Training Series, Module 23, Chapters 1 through 8 (NAVEDTRA 172-23-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of acoustic processing systems, directional low-frequency analyzer and recording (DIFAR) systems, single advanced signal processor (SASP) systems, recorder systems, sonobuoy receiver sets, sonobuoy reference systems, and sound recorder and producer sets of ASW systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of ASW systems. In addition, you will be questioned on identifying factors that affect the behavior of a sound beam in water.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain digital data systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of digital data systems • Operating parameters of digital data systems • Programming steps in computer program development
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 4 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 13, Chapters 1 through 3 (NAVEDTRA 172-13-00-98) • Navy Electricity and Electronics Training Series, Module 22, Chapters 1 through 4 (NAVEDTRA 172-22-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of digital data systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of digital data systems, operating parameters of digital data systems, and identifying programming steps in computer program development. In addition, you will be questioned on the fundamental concepts of number systems, boolean algebra, and logic circuits.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain weapon control systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of weapon control systems • Operating parameters of weapon control systems • Fighter aircraft weapons systems and their operating functions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of weapon control systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of weapon control systems, operating parameters of weapon control systems, and recognizing various fighter aircraft weapons systems and their operating functions.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain fire control radar systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of fire control radar systems • Operating parameters of fire control radar systems • Operating modes and system controls used in fire control radar
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 18, Chapters 1 through 4 (NAVEDTRA 172-18-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of fire control radar systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of fire control radar systems, operating parameters of fire control radar systems, and recognizing operating modes and system controls used in fire control radar systems.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain indicators
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of indicators • Operating parameters of indicators • Types of heading indicators and their primary functions • Components and functions of a non-heads-up display unit (NON-HUD) tactical display system • Components and operating fundamentals of a television system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of indicators. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of indicators, operating parameters of indicators, and identifying the types of heading indicators and their primary functions. In addition, you will be questioned on components and functions of a NON-HUD tactical display system. Furthermore, you will be questioned on components and operating fundamentals of a television camera system and cockpit television system.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain navigation systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of navigation systems • Operating parameters of navigation systems • Location of modules of navigation systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Aviation Electrician's Mate 3 & 2, Chapter 7 (NAVEDTRA 10348-G) • Navy Electricity and Electronics Training Series, Module 10, Chapters 1 through 4 (NAVEDTRA 172-10-00-98) • Navy Electricity and Electronics Training Series, Module 15, Chapter 3 (NAVEDTRA 172-15-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>You can expect questions about the maintenance on automatic direction finder (ADF), Doppler, VHF Omni-directional range (VOR), tactical air navigation system (TACAN), radar altimeter, global positioning system (GPS), inertial navigation system (INS), radar beacon, and glide slope navigation systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of navigation systems. In addition, you will be questioned on the basic characteristics of a gyroscope.</p>

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain communication systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of communication systems • Operating parameters of communication systems • Various frequency bands and their uses and limitations • General information on fiber optics and optical fibers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 12, Chapter 1 (NAVEDTRA 172-12-00-98) • Navy Electricity and Electronics Training Series, Module 17, Chapters 1 through 5 (NAVEDTRA 172-17-00-98) • Navy Electricity and Electronics Training Series, Module 24, Chapters 1 through 8 (NAVEDTRA 172-24-00-98)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the maintenance of high frequency (HF), ultra high frequency (UHF), very high frequency (VHF) radio sets and interior communication (IC) systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of radio sets and IC systems, general information on fiber optics, and identifying the various frequency bands and their uses and limitations. In addition, you will be questioned on the amplitude, phase, frequency, and wavelength of a sine wave.</p>
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Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain identification friend or foe (IFF) and selective identification feature (SIF) systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of IFF and SIF systems • Operating parameters of IFF and SIF systems • Components of IFF and SIF systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of IFF and SIF systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of IFF and SIF systems. In addition, you will be questioned on the five modes of IFF operation used by the air traffic control radar beacon system (ATCRBS) and naval aircraft-mode 1, mode 2, mode 3/A, mode C, and mode 4.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain infrared and laser systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of infrared and laser systems • Operating parameters of infrared and laser systems • Identify infrared advantages and remote sensing types
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 2 and 9 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of infrared and laser systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of infrared and laser systems. In addition, you will be questioned on infrared advantages and remote sensing types. Furthermore, you will be questioned on identifying the principles of optics and lasers to include terms, theory, and the particle theory of light.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain integrated electronics systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of integrated electronics systems • Operating parameters of integrated electronics systems • Peripheral avionics systems and their interaction with computers • Various logic circuitry used in computers and their functions and outputs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 4 and 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of integrated electronics systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of integrated electronics systems. You may also be questioned about peripheral avionics systems and their interaction with computers. In addition, you will be questioned about logic circuitry used in computers and their functions and outputs.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain electronic countermeasures (ECM) and electronic support measures (ESM) systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of ECM and ESM systems • Operating parameters of ECM and ESM systems • Identifying various types of deception and jamming devices used in ECM and recognize their characteristics.
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>You can expect questions about the maintenance of ECM and ESM systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, operating parameters, and classes of indicators-panoramic adapters, digital display indicators, and pulse analyzers.</p> <p>Furthermore, you will be questioned on identifying various types of deception and jamming devices used in ECM and recognize their characteristics.</p>

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain search radar systems
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of search radar systems • Operating parameters of search radar systems • Characteristics of radar to include range, resolution, azimuth, and accuracy • Factors that affect radar performance • Components of a pulse-modulated radar and functions of the components within the system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 11, Chapters 1 through 3 (NAVEDTRA 172-11-00-98) • Navy Electricity and Electronics Training Series, Module 18, Chapters 1 through 4 (NAVEDTRA 172-18-00-98)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of search radar systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, the operating parameters, and the characteristics of radar to include range, resolution, azimuth, and accuracy. In addition, you will be questioned on the factors that affect radar performance, the components of a pulse-modulated radar, and the functions of the components within the system.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain survival beacons
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of survival beacons • Operating parameters of survival beacons • Functions and operating principles of a search and rescue (SAR) buoy
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of survival beacons. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, the operating parameters, and the functions and operating principles of a search and rescue (SAR) buoy.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Avionics Systems Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain automatic test equipment (ATE) and general purpose electronic test equipment (GPETE)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of operation of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE) • Operating parameters of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE) • Interpreting avionics drawings, schematics, and test equipment of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE) • General information on circuit protection, control, and measurement of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE) • Commonly used test equipment and the applications of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 8 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 3, Chapters 1 through 3 (NAVEDTRA 172-03-00-98) • Navy Electricity and Electronics Training Series, Module 16, Chapters 1 through 6 (NAVEDTRA 172-16-00-98)

	<ul style="list-style-type: none"> • Navy Electricity and Electronics Training Series, Module 21, Chapters 1 through 5 (NAVEDTRA 172-21-00-98)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the maintenance of automatic test equipment (ATE) and general purpose electronic test equipment (GPETE). Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of ATE and GPETE, operating parameters of ATE and GPETE, and interpreting avionics drawings, schematics, and test equipment. In addition, you will be questioned on circuit protection, control, and measurement. Furthermore, you will be asked questions on the calibration and repair procedures associated with automatic test equipment (ATE) and general purpose electronic test equipment (GPETE).</p>

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Measure voltage, current, and resistance
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Theory of matter, energy, and electricity • Circuit control and protection devices • Interpretation of charts, diagrams, and schematics
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 1, 7, and Appendix II (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 1, Chapters 1 and 3 (NAVEDTRA 172-01-00-98) • Navy Electricity and Electronics Training Series, Module 2, Chapters 1 through 5 (NAVEDTRA 172-02-00-98) • Navy Electricity and Electronics Training Series, Module 3, Chapters 1 through 3 (NAVEDTRA 172-03-00-98) • Navy Electricity and Electronics Training Series, Module 4, Chapter 1 through 3 (NAVEDTRA 172-04-00-98) • Navy Electricity and Electronics Training Series, Module 7, Chapters 1 through 4 (NAVEDTRA 172-07-00-98) • Navy Electricity and Electronics Training Series, Module 08, Chapters 1 through 3 (NAVEDTRA 172-08-00-98) • Navy Electricity and Electronics Training Series, Module 16, Chapters 1 through 6 (NAVEDTRA 172-16-00-98)

	<ul style="list-style-type: none"> • Navy Electricity and Electronics Training Series, Module 19, Chapter 1 (NAVEDTRA 172-19-00-98) • Navy Electricity and Electronics Training Series, Module 20, Chapter 1 (NAVEDTRA 172-20-00-98)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about calculating voltage, current, and resistance using ohm's law. Questions will be of a general nature or specific to a certain type of circuit. You will also be questioned on physics, matter, electricity, energy, magnetism, and interpreting charts, diagrams, schematics, and electronic component color-coding.</p>

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform waveform analysis
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Wave shapes • Operating procedures of oscilloscopes, frequency-domain reflectometry (FDR) and time-domain reflectometry (TDR)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 8 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 6, Chapters 1 through 3 (NAVEDTRA 172-06-00-98) • Navy Electricity and Electronics Training Series, Module 9, Chapters 1 through 4 (NAVEDTRA 172-09-00-98) • Navy Electricity and Electronics Training Series, Module 16, Chapter 2 (NAVEDTRA 172-16-00-98) • Navy Electricity and Electronics Training Series, Module 21, Chapters 1 through 5 (NAVEDTRA 172-21-00-98)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions on maintaining aircraft wiring, transmission lines, and antenna systems. Questions will be of a general nature or specific to a certain type of circuit. You will also be questioned on wave shape characteristics of resistive and reactive loads. In addition, you will be questioned on the operating procedures for oscilloscopes, FDR, and TDR. Furthermore, you will be questioned on time, phase, frequency, and amplitude of observed waveforms.</p>
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Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Comply with electrostatic discharge sensitive (ESDS) program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Identification of ESDS devices • Procedures for maintaining ESDS safe areas • Hazards to ESD-sensitive devices • Handling and packaging techniques
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 6 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 21, Chapter 2 (NAVEDTRA 172-21-00-98) • Avionic Cleaning and Corrosion Prevention/Control, Chapter 9 (NAVAIR 16-1-540) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 22 (OPNAVINST 4790.2) • Navy Electricity and Electronics Training Series, Module 14, Chapter 3 (NAVEDTRA 172-14-00-98) • Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair, Chapter 5 (NAVAIR 01-1A-23)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the ESDS program. Questions will be of a general nature or specific to a certain procedure. You will also be questioned on ESDS devices and procedures for maintaining ESDS safe areas. In addition, you will be questioned on the hazards to ESD-sensitive devices and proper handling and packaging techniques.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain aircraft electric and electronic wiring
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Techniques for installing, repairing, and maintaining aircraft electrical wiring • Bonding and grounding procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Installation Practices Aircraft Electric and Electronic Wiring, Work Package 3 (NAVAIR 01-1A-505) • Aviation Electronics Technician 3, Chapters 6 and 7 (NAVEDTRA 12329)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the techniques used for installing, repairing, and maintaining aircraft electric and electronic wiring. Questions will be of a general nature. You will also be questioned on bonding and grounding procedures.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Comply with the corrosion prevention and control program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Corrosion theory • Preventive maintenance program • Inspection and corrosion prone areas • Corrosion removal and surface treatment • Treatment of specific area • Emergency procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Avionic Cleaning and Corrosion Prevention/Control, Chapters 1 through 10 (NAVAIR 16-1-540) • Aircraft Weapons System Cleaning and Corrosion Control, Chapters 1 through 9 (NAVAIR 01-1A-509) • Aviation Maintenance Ratings, Chapter 4 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 14 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the corrosion prevention and control program. Questions will be of a general nature. You will also be questioned on the theory of corrosion, preventative maintenance, inspections, removal, and treatment. In addition, you will be asked questions about emergency procedures.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Conduct aircraft inspections required for proper maintenance and safety of naval aircraft
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Inspection requirements for the following inspections: <ul style="list-style-type: none"> - Periodic - Acceptance - Transfer - Conditional - Phase - Special - Zonal - Daily - Preflight - Postflight - Turnaround
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapters 12, 13, 16, and Appendix C (OPNAVINST 4790.2) • Applicable maintenance requirement cards (MRCs)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about aircraft and engine inspection procedures, requirements, and responsibilities. Questions will be of a general nature or specific to a type of inspection. In addition, you will be questioned on the logbook requirements for each type of inspection.</p>
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Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Comply with foreign object damage and tool control programs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Purpose and scope of foreign object damage and tool control programs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 12 and 13 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the purpose and scope of foreign object damage and tool control programs. Questions will be of a specific nature. You will also be questioned on tool control inventories, identification markings, inspecting tool containers, and searching for missing tools. In addition, you will be questioned on preparing missing and broken tool reports.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain individual material readiness list (IMRL):
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sections of the IMRL and their purposes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 3 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapters 10 and 15 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the five major sections of the IMRL and their purposes. Questions will be of a general nature.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain hazardous material (HAZMAT)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Content of hazardous materials information system (HMIS) and hazardous material user guide (HMUG) • Procedures for handling and storage of HAZMAT • Requirements for labeling HAZMAT • Inspection requirements for HAZMAT • Disposal procedures for HAZMAT • Use and contents of Material Safety Data Sheets (MSDS)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 20 (OPNAVINST 4790.2) • HMUG • Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19) • Navy Occupational Safety and Health (NAVOSH) Program Manual, Chapter 7 (OPNAVINST 5100.23)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the HAZMAT program. Question will be of a general nature. You will also be questioned about the use, storage, disposal, labeling, and inspection requirements of HAZMAT. In addition, you will be questioned on the use and contents of MSDSs.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Initiate a maintenance action form (MAF)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Identification of parts and assemblies by using maintenance manuals, illustrated parts breakdowns (IPBs), supply catalogs, and other documentation tools • Definitions of maintenance action form (MAF) data elements
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 1 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume III, Chapter 5 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on initiating a MAF. Questions will be of a general nature or specific to a type of maintenance action. You will also be questioned on documentation tools used to identify parts and assemblies. In addition, you will be questioned on definitions of MAF data elements.

Advancement Handbook for AT3(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain naval air systems command technical manual program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for updating technical manuals • Interpreting technical directives (TD)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 11 (OPNAVINST 4790.2) • Naval Air Systems Command Technical Manual Program, Work Packages 007 and 015 (NAVAIR 00-25-100)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on updating technical manuals and interpreting TDs. Questions will be of a general nature. You will also be asked questions on incorporating rapid action changes (RACs) in technical manuals. In addition, you will be asked questions on the types and categories of technical directives.

Part 2

Advancement Handbook for AT2(O)

Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Monitor installation of avionics field changes/modifications
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Technical Directive (TD) compliance and documentation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 11 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 7 (NAVEDTRA 12017)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on TD compliance and documentation. Questions will be of a general nature. You will also be questioned on the different sections of the aircraft logbook and their purposes.

Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Electrical and Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Monitor avionics corrosion control program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Corrosion theory • Preventive maintenance program • Inspection and corrosion prone areas • Corrosion removal and surface treatment • Treatment of specific areas • Emergency procedures • Audit procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Avionic Cleaning and Corrosion Prevention/Control, Chapters 1 through 10 (NAVAIR 16-1-540) • Aircraft Weapons System Cleaning and Corrosion Control, Chapters 1 through 9 (NAVAIR 01-1A-509) • Aviation Maintenance Ratings, Chapter 4 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 14 (OPNAVINST 4790.2)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the corrosion prevention and control program. Questions will be of a general nature. You will also be questioned on the theory of corrosion, preventative maintenance, inspections, corrosion removal and treatment. In addition, you will be asked questions about emergency procedures and requirements for evaluating the avionics corrosion control program.</p>
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Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare special reports
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Requirements for preparing reports under the Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 10 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 6 (NAVEDTRA 12017)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on special reports dealing with responsibilities and requirements for reporting the following: substandard workmanship, improper QA procedures, and deficiencies in material and publications. Questions will be of a general nature or specific to a type of report.

Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Perform collateral duty inspections (CDI)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • CDI certification process • Procedures for receiving/screening inspections • Procedures for performing in-process inspections • Procedures for performing final inspections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Applicable maintenance requirement cards (MRCs) • Aviation Maintenance Ratings, Chapter 6 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 14 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing collateral duty inspections. Questions will be of a general nature or specific to a certain type of inspection. You will also be questioned on the CDI certification process and for procedures in receiving/screening inspections. In addition, you will be questioned on procedures for performing in-process inspections and procedures for performing final inspections.

Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain individual material readiness list (IMRL)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • The sections of the IMRL and their purposes • Procedures and requirements for updating the IMRL
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 3 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the five major sections of the IMRL and their purposes. Questions will be of a general nature. You will also be questioned on different types of transactions, reporting procedures, updating procedures, and inventories.

Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect hazardous material (HAZMAT) storage areas
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Content of Hazardous Materials Information System (HMIS) and Hazardous Material User Guide (HMUG) • Procedures for handling and storage of HAZMAT • Requirements for labeling HAZMAT • Inspection requirements for HAZMAT • Disposal procedures for HAZMAT • Use and contents of Material Safety Data Sheets (MSDS) • Quality assurance (QA) audit program
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 20 (OPNAVINST 4790.2) • Hazardous Material User Guide (HMUG) • Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19) • Navy Occupational Safety and Health (NAVOSH) Program Manual, Chapter 7 (OPNAVINST 5100.23)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions on the HAZMAT program. Questions will be of a general nature. You will also be questioned about the use, storage, disposal, labeling, and inspection requirements of HAZMAT. In addition, you will be questioned on the use and contents of MSDSs. Furthermore, you will be questioned on audit procedures for HAZMAT.</p>
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Advancement Handbook for AT2(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain Naval Air Systems Command (NAVAIR) Technical Manual Program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for coordinating dispersed technical library functions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 2 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 8 (OPNAVINST 4790.2) • Naval Air Systems Command Technical Manual Program, Work Packages 007, 015, 019, and 022 (NAVAIR 00-25-100)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the dispersed technical publication libraries. Questions will be of a general nature. You will also be questioned on the initial outfitting, central technical publication library stamp, and change entry certification record (CECR). In addition, you will be asked questions about the technical library audit program.

Part 3

Advancement Handbook for AT1(O)

Advancement Handbook for AT1(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Performing quality assurance (QA) representative inspections
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Certification/qualification process • Procedures for receiving/screening inspections • Procedures for performing in-process inspections • Procedures for performing final inspections • Procedures for performing QA audits
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Applicable maintenance requirement cards (MRCs) • Aviation Maintenance Ratings, Chapter 6 (NAVEDTRA 12017) • Hazardous Material Users Guide (HMUG), Groups 1 through 7 and 9, 11, and 12 • Naval Air Systems Command Technical Manual Program, Work Packages 005, 007, 010, 014, 015, 019, and 022 (NAVAIR 00-25-100) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 14 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume III, Chapter 3 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 8 (OPNAVINST 4790.2)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions on performing quality assurance inspections and audits. Questions will be of a general nature or specific to a certain type of inspection. You will also be questioned on the certification and qualification process along with procedures for receiving and screening inspections. In addition, you will be questioned on procedures for performing in-process inspections, final inspections and procedures for performing QA audits.</p>
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Advancement Handbook for AT1(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Monitor foreign object damage (FOD), individual material readiness list (IMRL), and electrostatic discharge sensitive (ESDS) programs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Purpose and scope of FOD • Purpose and scope of IMRL • Identification of ESDS devices • Procedures for maintaining ESDS safe areas • Recognizing the hazards to ESD-sensitive devices to include proper handling and packaging techniques
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapters 3 and 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 12 and 22 (OPNAVINST 4790.2) • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 6 (NAVEDTRA 12329) • Aviation Electronics Technician 1(O), Chapter 10 (NAVEDTRA 12331) • Navy Electricity and Electronics Training Series, Module 21, Chapter 2 (NAVEDTRA 172-21-00-98) • Avionic Cleaning and Corrosion Prevention/Control, Chapter 9 (NAVAIR 16-1-540) • Navy Electricity and Electronics Training Series, Module 14, Chapter 3 (NAVEDTRA 172-14-00-98)

	<ul style="list-style-type: none"> • Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair, Work Package 005 (NAVAIR 01-1A-23) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions on the purpose and scope of the FOD, IMRL, and ESDS programs. Questions will be of a general nature. You will also be questioned on the ESDS devices and the procedures for maintaining an ESDS safe area. In addition, you will be questioned on the hazards to ESD-sensitive devices to include proper handling and packaging techniques. Furthermore, you will be questioned on responsibilities and monitoring procedures for the FOD, IMRL, and ESDS programs.</p>

Advancement Handbook for AT1(O)

General AT(O) <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Monitor aircraft daily inspections
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Requirements for performing aircraft daily inspections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Applicable maintenance instruction manuals (MIMs) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapters 12, 13, 16, and Appendix C (OPNAVINST 4790.2) • Applicable maintenance requirement cards (MRCs)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about aircraft and engine inspection procedures, intervals, and logbook requirements for each type of inspection. Questions will be of a general nature.

Advancement Handbook for AT1(O)

General AT(O) <i>Skill Area</i>	Logistics/Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Monitor avionics shop tool control program (TCP)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Purpose and scope of TCP • Audit procedures for TCP
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8, 12, 13 (OPNAVINST 4790.2)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>You can expect questions about the purpose and scope of the tool control program. Questions will be of a general nature. You will also be questioned on tool control inventories, identification markings, inspecting tool containers, and on searching for missing tools. In addition, you will be questioned on preparing missing and broken tool reports. Furthermore, you can expect questions on audit procedures for the TCP.</p>

Appendix A

References Used in This Advancement Handbook

AT3(O)			
Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
HMUG	Hazardous Materials Users Guide	Introduction, Groups 1 through 7, and 9, 11, and 12	Note 3
NAVAIR 00-25-100	Naval Air Systems Command Technical Manual Program	Work Packages 007 and 015	Note 1
NAVAIR 01-1A-23	Standard Maintenance Practices Miniature/Microminiature (2M) Electronics Assembly Repair	Work Package 005	Note 1
NAVAIR 01-1A-505	Installation Practices Aircraft Electric and Electronic Wiring	Work Package 003	Note 1
NAVAIR 01-1A-509	Aircraft Weapons Systems Cleaning and Corrosion Control	Chapters 1 through 9	Note 1
NAVAIR 16-1-540	Avionic Cleaning and Corrosion and Corrosion/Prevention	Chapters 1 through 10	Note 1
NAVEDTRA 10348-G	Aviation Electrician's Mate 3 & 2	Chapter 7	Note 1
NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 1 through 5	Note 1
NAVEDTRA 12329	Aviation Electronics Technician 3	Chapters 1 through 9 and Appendix II	Note 1
NAVEDTRA 172-01-00-98	Navy Electricity and Electronics Training Series, Module 1	Chapters 1 and 3	Note 1
NAVEDTRA 172-02-00-98	Navy Electricity and Electronics Training Series, Module 2	Chapters 1 through 5	Note 1
NAVEDTRA 172-03-00-98	Navy Electricity and Electronics Training Series, Module 3	Chapters 1 through 3	Note 1
NAVEDTRA 172-04-00-98	Navy Electricity and Electronics Training Series, Module 4	Chapters 1 through 3	Note 1
NAVEDTRA 172-06-00-98	Navy Electricity and Electronics Training Series, Module 6	Chapters 1 through 3	Note 1
NAVEDTRA 172-07-00-98	Navy Electricity and Electronics Training Series, Module 7	Chapters 1 through 4	Note 1
NAVEDTRA 172-08-00-98	Navy Electricity and Electronics Training Series, Module 8	Chapters 1 through 3	Note 1

AT3(O) (Continued)			
Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
NAVEDTRA 172-09-00-98	Navy Electricity and Electronics Training Series, Module 9	Chapters 1 through 4	Note 1
NAVEDTRA 172-10-00-98	Navy Electricity and Electronics Training Series, Module 10	Chapters 1 through 4	Note 1
NAVEDTRA 172-11-00-98	Navy Electricity and Electronics Training Series, Module 11	Chapters 1 through 3	Note 1
NAVEDTRA 172-12-00-98	Navy Electricity and Electronics Training Series, Module 12	Chapter 1	Note 1
NAVEDTRA 172-13-00-98	Navy Electricity and Electronics Training Series, Module 13	Chapters 1 through 3	Note 1
NAVEDTRA 172-14-00-98	Navy Electricity and Electronics Training Series, Module 14	Chapter 3	Note 1
NAVEDTRA 172-15-00-98	Navy Electricity and Electronics Training Series, Module 15	Chapters 1 through 4	Note 1
NAVEDTRA 172-16-00-98	Navy Electricity and Electronics Training Series, Module 16	Chapters 1 through 6	Note 1
NAVEDTRA 172-17-00-98	Navy Electricity and Electronics Training Series, Module 17	Chapters 1 through 5	Note 1
NAVEDTRA 172-18-00-98	Navy Electricity and Electronics Training Series, Module 18	Chapters 1 through 4	Note 1
NAVEDTRA 172-19-00-98	Navy Electricity and Electronics Training Series, Module 19	Chapter 1	Note 1
NAVEDTRA 172-20-00-98	Navy Electricity and Electronics Training Series, Module 20	Chapters 1 through 5	Note 1
NAVEDTRA 172-21-00-98	Navy Electricity and Electronics Training Series, Module 21	Chapters 1 through 5	Note 1
NAVEDTRA 172-22-00-98	Navy Electricity and Electronics Training Series, Module 22	Chapters 1 through 4	Note 1
NAVEDTRA 172-23-00-98	Navy Electricity and Electronics Training Series, Module 23	Chapters 1 through 8	Note 1
NAVEDTRA 172-24-00-98	Navy Electricity and Electronics Training Series, Module 24	Chapters 1 through 8	Note 1
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapters 10, 12, 13, 15, 16, & Appendix C	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume III	Chapter 5	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 11, 12, 13, 14, 20, and 22	Note 2

AT3(O) (Continued)			
Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
OPNAVINST 5100.19	Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I	Chapter B3	Note 2
OPNAVINST 5100.23	Naval Occupational Safety and Health (NAVOSH) Program Manual	Chapter 7	Note 2
AT2(O)			
Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
HMUG	Hazardous Materials Users Guide	Introduction, Groups 1 through 7, and 9, 11, and 12	Note 3
NAVAIR 00-25-100	Naval Air Systems Command Technical Manual Program	Work Packages 007, 015, 019, and 022	Note 1
NAVAIR 01-1A-509	Aircraft Weapons Systems Cleaning and Corrosion Control	Chapters 1 through 9	Note 1
NAVAIR 16-1-540	Avionic Cleaning and Corrosion and Corrosion/Prevention	Chapters 1 through 10	Note 1
NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 2, 3, 4, 6, and 7	Note 1
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapters 10 and 14	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume IV	Chapter 1	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 8, 10, 11, 14, and 20	Note 2
OPNAVINST 5100.19	Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat Volume I	Chapter B3	Note 2
OPNAVINST 5100.23	Naval Occupational Safety and Health (NAVOSH) Program Manual	Chapter 7	Note 2

AT1(O)			
Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
HMUG	Hazardous Materials Users Guide	Introduction, Groups 1 through 7, and 9, 11, and 12	Note 3
NAVAIR 00-25-100	Naval Air Systems Command Technical Manual Program	Work Packages 005, 007, 010, 014, 015, 019, and 022	Note 1
NAVAIR 01-1A-23	Standard Maintenance Practices Miniature/Microminiature (2M) Electronics Assembly Repair	Work Package 005	Note 1
NAVAIR 16-1-540	Avionic Cleaning and Corrosion and Corrosion/Prevention	Chapter 9	Note 1
NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 3, 5, and 6	Note 1
NAVEDTRA 12329	Aviation Electronics Technician 3	Chapter 6	Note 1
NAVEDTRA 12331	Aviation Electronics Technician 1 (Organizational)	Chapter 10	Note 1
NAVEDTRA 172-14-00-98	Navy Electricity and Electronics Training Series, Module 14	Chapter 3	Note 1
NAVEDTRA 172-21-00-98	Navy Electricity and Electronics Training Series, Module 21	Chapter 2	Note 1
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapters 12, 13, 14, 16, and Appendix C	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume III	Chapter 3	Note 2
OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 8, 10, 12, 13, and 22	Note 2

LEGEND:

Note 1 — To order, MILSTRIP to NAVICP PHILA or via INTERNET
<http://www.nll.navsup.navy.mil/>

Note 2 — INTERNET—<http://neds.nebt.daps.mil/>

Note 3 — HMC&M/HMIS CD-ROM
Letter request to:
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